



Magda Havas, B.Sc., Ph.D.

Environmental & Resource Studies
TRENT UNIVERSITY, PETERBOROUGH, ONTARIO, CANADA, K9J 7B8
Phone: (705) 748-1011 ext. 1232, FAX: (705) 748-1569, e-mail mhavas@trentu.ca

Open letter to Health Canada

Response to: *Evaluation of the Stetzer Filters*¹

October 10, 2006

The Honorable Tony Clement,
Minister of Health,
Health Canada.
clement.j@parl.gc.ca

I raise a serious concern about a document¹ written by six scientists at Health Canada's Consumer and Clinical Protection Bureau that was recently posted on the BC Centre for Disease Control² web site. The Health Canada scientists purport to test the effectiveness of the Graham/Stetzer filters to reduce dirty electricity. This document does not appear on the Health Canada web site and has not been published in a peer-reviewed journal. Had it been peer reviewed it would not have been accepted for the obvious errors I mention below. This document is more concerned in protecting the electric utility than it is in protecting the health of Canadians. It surprises me that Health Canada would approve release of this document with so many fundamental errors.

It is my understanding that this document has been circulated widely yet the Health Canada authors did not have the courtesy to send a copy of their report to the designers of this filter, Professor Martin Graham (UC Berkeley) and Mr. Dave Stetzer (President of Stetzer Electric).

I ask you to look into this matter. Dave Stetzer has agreed to demonstrate how the filters work using appropriate equipment and I ask you to encourage your scientists at Health Canada to take him up on his offer.

What follows is my evaluation of and response to the Health Canada document¹.

Sincerely,
Magda Havas

¹ Gajda, G., A. Thansandote, E. Lemay, D. Lecuyer, W. Gorman, and J. McNamee. 2006. *Report on Evaluation of Stetzer Filters*, Consumer and Clinical Radiation Protection Bureau, Health Canada.

² BCCDC web site: www.bccdc.org/content.php?.item=62 NOTE: This agency states the following:

Cell Phones: *Scientific evidence to date has **not** presented convincing evidence from either animal, cellular, laboratory studies or epidemiology to implicate electromagnetic radiation exposure from portable phones as a cause of cancer.*

Cellular Transmitting Towers: *Most research studies conducted to date have **not** shown that electromagnetic fields surrounding a cellular transmitter site cause cancer or other adverse health effects in the population.*

Power Frequency Electric and Magnetic Fields: *Therefore the available scientific evidence to date does **not** support the assumption that adverse health effects from exposure to these fields at levels normally encountered in our homes, schools and offices pose a risk to human health.*

Havas, M. 2006. *Response to: Evaluation of the Stetzer Filters*. Open letter to Health Canada, October 10, 2006.

Many products are now available to help people who suffer from exposure to electromagnetic energy and it is right for Health Canada to take these claims seriously and to test the products to see if they do indeed accomplish what they claim. Obviously this is what Health Canada had in mind when they decided to test the GS filters. I applaud them for this but am deeply disturbed by some of the fundamental errors they made during the testing of these filters and in the flawed document they produced.

Health Canada used equipment that neither had the appropriate range of frequencies nor had the needed sensitivity to test the GS filters? Health Canada inappropriately applied equations intended for linear loads to non-linear loads? Health Canada claimed that the GS filters produce dirty electricity that may be harmful to human health when they previously denied any harmful effects of dirty electricity? Health Canada seems more concerned about the impact these filters might have on the electricity providers rather than the impact dirty electricity might have on the health of Canadians, as their name implies?

This open letter is intended to set the record straight and to offer Health Canada a demonstration of what the GS filters do using appropriate equipment.

I will deal with some of the more blatant errors in the Health Canada document and try to keep it as concise and non-technical as possible so that others will see what Health Canada has done or failed to do. I understand that Dr. Don Hillman (Michigan State University) responded earlier this year to statements made in this document concerning biological effects of dirty electricity and that Dr. Martin Graham (UC Berkeley) plans to respond to the electrical engineering aspects based on the Health Canada study design and execution.

1. The GS filters remove dirty electricity within the frequency range of 4 to 100 kHz (4,000 and 100,000 cycles per second) and their ability to reduce microsurgues above and below this range falls off rapidly. This was clearly stated in the Havas and Stetzer (2004) document cited by Health Canada.

So why did Health Canada use equipment that covered the range of 50 Hz to 5 kHz? There was an overlap of 1 kHz and this tested 1% of the effective frequency range of the filters. Clearly inappropriate instrumentation was used and hence Health Canada can make no claims as to whether or not the filters work because they were unable to test the filters properly. This alone makes the entire document worthless as a test of the effectiveness of the GS filters to reduce dirty electricity in the 4 to 100 kHz frequency range (Figure 1).

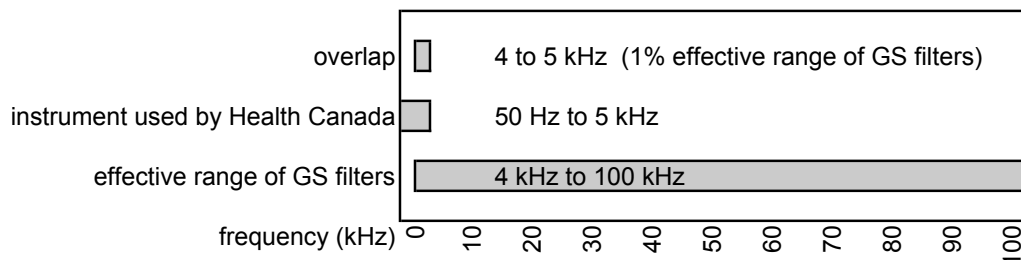


Figure 1. Frequency range for GS filter, frequency range for equipment Health Canada used to test the GS filters, overlapping frequencies.

2. The dirty electricity rides on top of the 60 Hz sine wave yet Health Canada made no attempt to separate the 60 Hz cycle from the high frequencies. They could have used a ubiquitous filter and thus had more accuracy for the higher frequencies for at least 1 kHz of the overlap between the instrumentation and the filter's effective range.

Health Canada admits their equipment did not have the appropriate sensitivity because, when the GS filter was plugged in, the microsurge meter measured reductions in dirty electricity that their equipment failed to detect.

3. Health Canada states that the filters have no effect at low frequencies in reducing harmonics. They provide evidence of this up to the 7th harmonic or 420 Hz. No one ever claimed the GS filters worked at these low frequencies. They work for the frequency range of 4,000 to 100,000 Hz and 420 Hz is not within that range. This is a red herring meant to discredit the filters by stating they don't work but for a frequency range they were not intended for. This lower frequency has less energy and is less likely to be as biologically active as higher frequencies (Riley 1998). See Item 5 below.
4. Health Canada erroneously claims that low levels of dirty electricity have no biological effects, but they provide no documentation to support their claim.

Studies show that people who have multiple sclerosis, type 1 and type 2 diabetics, chronic fatigue, tinnitus, and symptoms of electromagnetic hypersensitivity have benefited when the filters were used to clean up their home or work environment (Havas and Stetzer 2004). We have empirical evidence that these filters work both in the sense of reducing dirty electricity and improving health.

Diabetics had lower fasting glucose levels and required less insulin. Our studies with diabetics were independently replicated in Japan with similar results. According to Health Canada an estimated two million Canadians have diabetes and the cost of diabetes in Canada is estimated to be up to \$9 billion annually. If even a small percentage of these diabetics could benefit by cleaning up the dirty electricity in their home/work/school environment, the savings in health care could be considerable.

Multiple sclerosis patients had reduced tremors and some were able to walk unassisted within a few days to weeks after filters were installed in their homes. No other changes were made in their diet or medication during this period to account for these changes. We have video-documented evidence of these improvements. How does Health Canada explain this and what evidence do they have to the contrary to support the claims that dirty electricity is not biologically active? According to the Multiple Sclerosis Society of Canada (2002) Canada has one of the highest rates of MS in the world. An estimated 50,000 Canadians have MS and 70% of people with MS are unable to work 5-10 years after they are diagnosed. A number of people with MS who have used the GS Filters were able to continue work or return to work after they reduced the dirty electricity in their home/work environment. Their improved quality of life, the reduced stress on family members, and their ability to remain productive members of society should be of enormous interest to Health Canada.

5. Health Canada claims that the GS filters produce dirty electricity at the low frequency range and that this dirty electricity may be harmful. How can they argue it both ways? At first they claim that the levels of dirty electricity are so low that they are not biologically active and then they claim that the filters produce low levels of dirty electricity that are harmful to health.

Energy is related to frequency and the higher the frequency the greater the energy. Sixty kHz (60,000 Hz) has 1000 times more energy than 60 Hz. Also, frequencies above 1.7 kHz begin to penetrate the body (Riley 1998). Yet Health Canada claims that the lower frequencies, purportedly generated by the GS filters, have a greater biological effect with less energy and less penetrating power. This is

contrary to logic. Dr. Don Hillman addresses this in greater detail in his letter to Health Canada sent earlier this year (2006).

6. Health Canada claims that the filters would increase our demand for electricity requiring more transmission facilities. The electricity provider will have additional transmission losses due to the continuous nature of this load in their distribution lines and transformers. However, if manufacturers of electronic equipment properly filtered their equipment and if the utility distributed clean electricity these filters would not be necessary.

Poor Power Quality

Dirty electricity is a serious utility concern. It costs industry in the United States between 4 and 6 billion dollars each year for dirty power (Fortune, June 5, 1999) and this does not include the health costs. Industry has long recognized this and they use large capacitors (filters) because they require clean electricity for proper functioning of their equipment. Power surges are costly if they stop production and damage equipment. Surge suppressors are used in homes and offices to protect computers and other sensitive equipment for the same reason.

The IEEE (Institute of Electrical and Electronics Engineers) has long recognized the problems associated with spurious radio frequencies (RF) and the electric utilities have filters to mitigate this problem, although they tend not to use them as often as they should (see Ontario Hydro's own document, *Power Quality Reference Guide* (1998)).

According to the IEEE 519-1992, "*Since most electronic equipment is located at a low voltage level of its associated power distribution system, it is frequently exposed to the effects of voltage notching. Voltage notches frequently introduce frequencies, both harmonic and nonharmonic, that are much higher than normally exhibited in 5 kV and higher voltage distribution systems. These frequencies can be in the radio frequency (RF) range, and as such, can introduce harmful effects associated with spurious RF* (page 39)."

Poor power quality is a serious problem and both industry and the utilities have filters to improve power quality. Now a filter that plugs into an outlet and doesn't require an electrician has been designed for the home. The GS filter is a smaller version of the capacitors used by industry. The GS filter protects equipment from power surges and research shows that it helps people who are sensitive to this form of energy (Havas and Stetzer 2004). Surely the novel information here is not that a filter can reduce dirty electricity but that dirty electricity affects health. Isn't this what Health Canada should be testing?

Electromagnetic Hypersensitivity

People, who are genuinely suffering from what they describe as electrical hypersensitivity (EHS)³, contact me from all over North America. We have been able to help a few of those individuals who have participated in studies. Countless others have also benefited from the filters. They can't all be wrong. I encourage Health Canada to test the health claims we make in our studies because that is what is of primary importance.

³ The World Health Organization (2004) describes electromagnetic hypersensitivity (EHS) as: "... a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs). Whatever its cause, EHS is a real and sometimes a debilitating problem for the affected persons..."

Estimates show that 3% of the population has electrical hypersensitivity (EHS) and that an additional 35% have symptoms of EHS (Philips and Philips 2006). That range accounts for between 980,000 and 11 million Canadians who may be adversely affected by electromagnetic pollution in its various forms. So this is potentially a very serious health concern in Canada.

Dirty electricity is ubiquitous and getting worse because of the electronic equipment we use and because of the inadequacy of some of our power lines. Eventually the utility will have to deal with this pollutant and we hope it will be sooner rather than later so that fewer lives will be destroyed because of the insensitivity of the industry and their failure to adhere to their own guidelines.

Health Canada should take a more proactive role in dealing with electromagnetic pollution and electrical hypersensitivity by informing doctors about the symptoms of EHS, testing the products that claim to work, establishing monitoring programs for electromagnetic pollution in schools and elsewhere, and providing Canadians with solutions through legislation to ensure that our environment is as clean, safe, and healthy as possible.

An offer to demonstrate how the filters work

Dave Stetzer, one of the co-inventors of the GS filter, would be willing to demonstrate to Health Canada how the filters work using the appropriate equipment. He makes this offer because it is important for Health Canada to be aware of the seriousness of this problem and to understand how the filters work, especially if they later decide to do some studies with human subjects.

I look forward to a favorable response to Dave Stetzer's offer because I assume that we are interested in the same thing--the health of Canadians.

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